

We Claim:

1. A vehicle system having an internal combustion engine, comprising:

an intake manifold coupled to the engine;

5 a brake booster coupled to said intake manifold through a check valve;

a pressure sensor coupled to said brake booster;

a controller for measuring a brake booster pressure from said sensor; and

10 estimating an operating parameter of the vehicle system based on said brake booster pressure sensor.

2. The system recited in claim 1, wherein the operating parameter is a pressure in the manifold.

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3. The system recited in claim 1, wherein the operating parameter is an air mass flow.

4. The system recited in claim 3, wherein the  
20 operating parameter is an air mass flow entering the engine.

5. The system recited in claim 3, wherein the operating parameter is an air mass flow entering the manifold.

25 6. The system recited in claim 2, wherein the operating parameter is a throttle position of a throttle coupled to the manifold.

7. The system recited in claim 1, wherein said controller further estimates the operating parameter based on said brake booster pressure sensor when brake booster pressure  
5 is changing.

8. The system recited in claim 7, wherein said controller further estimates the operating parameter based on said brake booster pressure sensor when brake booster pressure  
10 is decreasing.

9. The system recited in claim 7, wherein said controller further estimates the operating parameter based on said brake booster pressure sensor when brake booster pressure  
15 is increasing.

10. The system recited in claim 8, wherein said operating parameter is a manifold pressure, wherein said controller further estimates said manifold pressure based on  
20 said brake booster pressure sensor when brake booster pressure is decreasing.

11. The system recited in claim 10, wherein said controller further estimates said manifold pressure based on  
25 said brake booster pressure sensor and a predetermined value representing pressure drop across said check valve when brake booster pressure is decreasing.

12. The system recited in claim 2, wherein said controller further determines an estimate of air flow through the engine based on said estimate of said manifold pressure.

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13. The system recited in claim 1, wherein said controller further modifies a control signal based on said estimate of said operating parameter.

10 14. A vehicle system having an internal combustion engine, comprising:

an intake manifold coupled to the engine;

a brake booster coupled to said intake manifold through a check valve;

15 a pressure sensor coupled to said brake booster;

a controller for measuring brake booster pressure from said pressure sensor;

estimating an engine operating parameter of the vehicle system based on said brake booster pressure sensor; and

20 modifying a control signal based on said estimate of said engine operating parameter.

15. A vehicle system having an internal combustion engine, comprising:

an intake manifold coupled to the engine;

a brake booster coupled to said intake manifold through a  
5 check valve;

a pressure sensor coupled to said brake booster;

a controller measuring brake booster pressure from said  
pressure sensor;

determining a pressure in the intake manifold based on  
10 said measured brake booster pressure; and

modifying a control signal based on said operating  
parameter.

16. A vehicle system having an internal combustion  
15 engine, comprising:

an intake manifold coupled to the engine;

a brake booster coupled to said intake manifold through a  
check valve;

a pressure sensor coupled to said brake booster;

20 a controller measuring brake booster pressure from said  
pressure sensor;

determining an air flow through the engine based on said  
measured brake booster pressure; and

modifying a control signal based on said operating  
25 parameter.